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FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS



Rio Grande Drainage Basin

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Colorado Agricultural Experiment Station

Data included in this report were obtained by the agencies named above in cooperation with the U. S. Forest Service, National Park Service, State Engineer of Colorado, Wyoming and New Mexico and other Federal, State and local organizations.

As of
FEB. 1, 1953.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY
AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in this bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge
River Forecast Center
U. S. Weather Bureau
712 Federal Office Building
Kansas City 6, Missouri

FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION
WATER SUPPLY FORECASTS

FOR

RIO GRANDE BASIN

February 1, 1953

Report Prepared

by

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Fort Collins, Colorado

Division of Irrigation
Soil Conservation Service
Colorado Experiment Station
Fort Collins, Colorado

General Series Paper No. 534
Colorado Agricultural Experiment Station

WATER SUPPLY OUTLOOK
RIO GRANDE AND CANADIAN DRAINAGE BASINS
FEBRUARY 1, 1953

In contrast to a year ago, when record high snow water contents were measured on the Rio Grande drainage in Colorado, this year the snow accumulation to February 1 is slightly less than normal. This general condition exists over the Rio Grande drainage in northern New Mexico as well as in Colorado. The most probable summer flow of the Rio Grande is about 80 percent of normal into San Luis Valley and 40 percent of normal in New Mexico. These estimates are subject to considerable revision as the snow accumulation season advances. Soil moisture conditions are fair in San Luis Valley and poor along the Rio Grande in New Mexico.

Snow accumulation in the mountains to date is just below normal in all of the drainage around San Luis Valley. This is about one-third of the snow water content measured a year ago in this area. The Wolf Creek Pass snow course now has 14 inches of water on the course as compared to 42 inches on February 1, 1952. Soil moisture under the snow in the mountains is much improved over the 1952 but probably still on the dry side of average. Snow melting has occurred at relatively high elevations because of unusually warm temperatures during January. Storage in irrigation reservoirs on the Rio Grande and tributaries in San Luis Valley is two to three times that stored on February 1, 1952 and above average.

Snow cover in northern New Mexico is similar to San Luis Valley. Mountain soils are dry under the snow except where snow melting has occurred on exposed slopes at relatively high elevations. No increase in stream flow was noted due to early season snow melt. Soil moisture conditions are reported as good at Taos but dry at valley elevations along the Rio Grande in New Mexico. Storage in El Vado is 8,200 acre-feet or nearly empty.

Storage in Elephant Butte and Caballo reservoirs now totals 437,000 acre-feet. This is much better than a year ago but still a critically low in view of the current water supply outlook. Soil moisture conditions in the lower Rio Grande valley are reported as poor. Stream flow is below average.

Snow cover on the headwaters of the Pecos is about normal. Ordinarily snow melt is not a major factor in the flow of this stream at any distance from the mountains. Soil moisture conditions on the Carlsbad project are poor. Storage in Alamogordo and McMillan reservoirs is 32,500 acre-feet.

On Canadian River tributaries snow cover is also about normal. Soil moisture conditions on the Tucumcari irrigated area are good after snow fall on the plains. Storage in Conchas reservoir is now 75,700 acre-feet as compared to 119,000 acre-feet a year ago and 286,000 acre-feet as average.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE

The University of Chicago is a leading institution of higher learning in the United States. It is a private, non-sectarian university, and its primary purpose is to advance the frontiers of knowledge in all fields of human endeavor. The university is composed of several faculties, each of which is responsible for the instruction and research in its respective field. The Faculty of the History of Arts and Architecture is one of the most distinguished of these faculties, and its members are among the leading authorities in their respective fields. The faculty is composed of both American and foreign scholars, and its members are engaged in a wide range of research and teaching activities. The faculty is also responsible for the administration of the department, and its members are actively involved in the development of the department's programs and policies.

The Faculty of the History of Arts and Architecture is a leading institution of higher learning in the United States. It is a private, non-sectarian university, and its primary purpose is to advance the frontiers of knowledge in all fields of human endeavor. The university is composed of several faculties, each of which is responsible for the instruction and research in its respective field. The Faculty of the History of Arts and Architecture is one of the most distinguished of these faculties, and its members are among the leading authorities in their respective fields. The faculty is composed of both American and foreign scholars, and its members are engaged in a wide range of research and teaching activities. The faculty is also responsible for the administration of the department, and its members are actively involved in the development of the department's programs and policies.

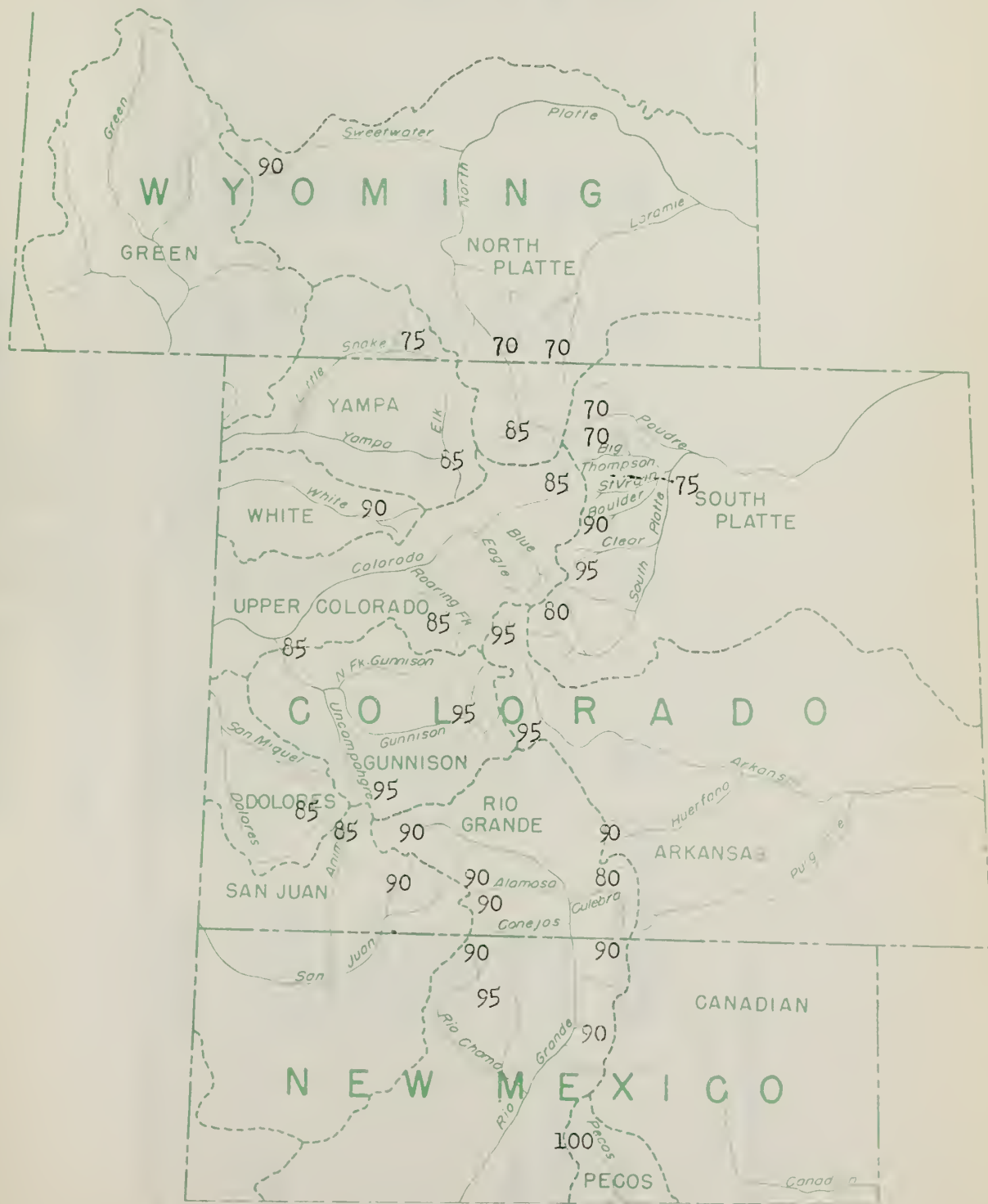
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WATER CONTENT OF SNOW ON THE WATERSHEDS OF
PLATTE, ARKANSAS, UPPER COLORADO AND RIO GRANDE BASINS
BASED ON SNOW SURVEYS MADE APPROXIMATELY FIRST DAY OF MONTH

In Percent of Normal
February 1, 1953



SNOW SURVEYS AND IRRIGATION WATER FORECASTS
RIO GRANDE BASIN

STATUS OF RESERVOIR STORAGE, February 1, 1953

| STREAM | RESERVOIR | USABLE CAPACITY 1000 A.F. | THOUSANDS OF ACRE FEET IN STORAGE | | | | | 10-year Ave. 1943-1952 |
|----------------|-----------------|---------------------------------|-----------------------------------|-------|-------|-------|-------|---------------------------|
| | | | About Feb. 1 | | | | | |
| | | | 1953 | 1952 | 1951 | 1950 | | |
| RIO GRANDE | Rio Grande | 45.0 | 15.3 | 5.3 | 2.8 | 29.1 | 11.8 | |
| | Santa Maria | 45.0 | 9.4 | 1.9 | 2.2 | 22.9 | 8.6 | |
| | Sanchez | 103.0 | 4.8 | 3.1 | 2.8 | 12.3 | 10.4 | |
| | Terrace | 17.7 | 4.6 | 1.9 | 1.3 | 3.7 | 2.6 | |
| | Continental | 26.7 | 4.5 | 2.5 | 2.8 | 17.3 | 8.7 | |
| | Platoro | 60.0 | | | | | | |
| CHAMA RIVER | Elephant Butte | 2273.7 | 355.0 | 37.4 | 309.8 | 607.6 | 776.9 | |
| | Caballo | 365.0 | 81.8 | 44.5 | 117.9 | 240.2 | 197.3 | |
| CANADIAN RIVER | El Vado | 226.0 | 8.2 | 0.0 | 31.0 | 163.8 | 62.4 | |
| | Conchas | 600.0 | 75.7 | 118.6 | 195.1 | 225.1 | 286.2 | |
| PECOS RIVER | Alamogordo | 148.0 | 30.0 | 22.0 | 103.0 | 104.0 | 52.2 | |
| | McMillan-Avalon | 45.0 | 2.5 | 2.5 | 9.4 | 25.3 | 12.0 | |

*Some for shorter periods.

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

RIO GRANDE BASIN

February 1, 1953

SUMMARY OF FEBRUARY 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

| WATERSHEDS | Snow Depth 1953 Inches | Snow Water Content in Inches | | | | No. of courses in Avg. | Snow Density 1953 Percent | 1953 Water Content in percent of | |
|--------------------|------------------------------|------------------------------|------|------|-----------------|---------------------------------|------------------------------------|-------------------------------------|--------------|
| | | 1953 | 1952 | 1951 | 15 yr.* Avg. | | | 1952 | 16 yr. Avg.* |
| Rio Grande (Colo.) | 23.1 | 6.0 | 15.6 | 4.1 | 6.6 | 10 | 26 | 38 | 91 |
| Upper Rio Grande | 26.9 | 7.4 | 20.2 | 5.9 | 7.9 | 3 | 28 | 37 | 94 |
| Alamosa River | 13.5 | 2.7 | 15.0 | 1.9 | 4.7 | 1 | 20 | 18 | 57 |
| Conejos River | 31.4 | 9.0 | 19.7 | 6.2 | 9.9 | 2 | 29 | 46 | 91 |
| Culebra River | 25.0 | 5.6 | 15.1 | 3.1 | 6.9 | 1 | 22 | 37 | 81 |
| Rio Grande (N.M.) | 18.1 | 5.0 | 9.0 | 1.3 | 5.0 | 14 | 28 | 56 | 100 |
| Chama River | 28.6 | 8.1 | 15.9 | 3.6 | 8.1 | 5 | 29 | 52 | 101 |
| Pecos River | 12.2 | 3.1 | 4.0 | 0.4 | 3.8 | 3 | 25 | 77 | 82 |
| Canadian River | 19.1 | 4.8 | 9.0 | 2.2 | 5.1 | 3 | 25 | 53 | 97 |

*Some for shorter periods

P R E C I P I T A T I O N D A T A

| WATERSHED | STATE | Precipitation October 1 to January 31 Inches | Departure from Normal Inches | Precipitation January Inches | Departure from Normal Inches |
|----------------|------------|---|---------------------------------------|------------------------------------|---------------------------------------|
| Canadian | New Mexico | 1.17 | -1.58 | 0.12 | -0.37 |
| Rio Grande | Colorado | 1.29 | -1.02 | 0.13 | -0.31 |
| Rio Grande (N) | New Mexico | 3.01 | -1.61 | 0.37 | -0.93 |
| Rio Grande (S) | New Mexico | 0.58 | -1.57 | 0.12 | -1.57 |
| Pecos | New Mexico | 1.14 | -1.93 | 0.12 | -0.40 |

*Average of Selected High Elevation Stations

RIO GRANDE DRAINAGE SNOW SURVEYS
February 1, 1953

| Drainage Basin and Snow Course | Snow Cover Measurements | | | | | | | | |
|--------------------------------------|-------------------------|-------|----------------------|---------------|---------------|------|------|-----------------|------------------------|
| | No. and State | Elev. | Date of Survey | Snow Depth | Water Content | | | Past Record | |
| | | | | | 1953 | 1952 | 1951 | Yrs. of Rec. | Av. Water Con- tent |
| RIO GRANDE IN COLORADO | | | | In. | In | In | In | | In |
| Wolf Creek Pass | 26 Colo. | 10000 | 1/30 | 45.6 | 14.4 | 42.0 | 13.1 | 13 | 14.5 |
| Upper Rio Grande | 27 " | 9350 | 1/31 | 21.3 | 4.6 | 10.7 | 3.4 | 12 | 5.3 |
| Silver Lakes | 47 " | 9600 | 1/30 | 13.5 | 2.7 | 15.0 | 1.9 | 13 | 4.7 |
| River Springs | 49 " | 9300 | 1/30 | 18.9 | 4.1 | 17.7 | 2.6 | 12 | 6.0 |
| LaVeta Pass #2 | 74 " | 9300 | 2/2 | 23.0 | 6.9 | 15.8 | 3.5 | 13 | 5.6 |
| Cumbres Pass #2 | 77 " | 10000 | 1/27 | 43.8 | 14.0 | 21.6 | 9.7 | 14 | 13.7 |
| Santa Maria | 80 " | 9700 | 2/1 | 13.9 | 3.3 | 7.9 | 1.3 | 14 | 3.8 |
| Culebra | 82 " | 10000 | 1/30 | 25.0 | 5.6 | 15.1 | 3.1 | 13 | 6.9 |
| Ft. Garland | 84 " | 8200 | 2/1 | 11.7 | 2.1 | 4.1 | 0.0 | 12 | 1.8 |
| Cochetopa Pass | 126 " | 10000 | 2/2 | 14.4 | 2.3 | 5.6 | 2.8 | 3 | 3.7 |
| Howardville | 151 " | 9800 | 1/30 | 26.7 | 7.2 | 17.5 | 6.4 | 2 | |
| Wolf Creek Summit | 155 " | 11100 | 1/30 | 41.6 | 13.9 | 40.4 | 12.1 | 2 | |
| Average for drainage | | | | 23.1 | 6.0 | 15.6 | 4.1 | | 6.6 |
| UPPER RIO GRANDE | | | | | | | | | |
| Wolf Creek Pass | 26 Colo. | 10000 | 1/30 | 45.6 | 14.4 | 42.0 | 13.1 | 13 | 14.5 |
| Upper Rio Grande | 27 " | 9350 | 1/31 | 21.3 | 4.6 | 10.7 | 3.4 | 12 | 5.3 |
| Santa Maria | 80 " | 9700 | 2/1 | 13.9 | 3.3 | 7.9 | 1.3 | 14 | 3.8 |
| Average for drainage | | | | 26.9 | 1.4 | 20.2 | 5.9 | | 7.9 |
| ALAMOSA RIVER | | | | | | | | | |
| Silver Lakes | 47 Colo. | 9600 | 1/30 | 13.5 | 2.7 | 15.0 | 1.9 | 13 | 4.7 |
| CONEJOS RIVER | | | | | | | | | |
| River Springs | 49 Colo. | 9300 | 1/30 | 18.9 | 4.1 | 17.7 | 2.6 | 12 | 6.0 |
| Cumbres Pass #2 | 77 " | 10000 | 1/27 | 43.8 | 14.0 | 21.6 | 9.7 | 13 | 13.7 |
| Average for drainage | | | | 31.4 | 9.0 | 19.7 | 6.2 | | 9.9 |
| CULEBRA RIVER | | | | | | | | | |
| Culebra | 82 Colo. | 10000 | 1/30 | 25.0 | 5.6 | 15.1 | 3.1 | 13 | 6.9 |

RIO GRANDE DRAINAGE SNOW SURVEYS

February 1, 1953

| February 1, 1955 | | | | | | | | | | |
|--------------------------------------|---------------------|-------|----------------------|-------------------------|---------------|------|------|----------------|----------------------|--|
| Drainage Basin and Snow Course | No. and State | Elev. | Date of Survey | Snow Cover Measurements | | | | | Past Record | |
| | | | | Snow Depth | Water Content | | | Yr. of Rec. | Av. Water Content | |
| | | | | | 1953 | 1952 | 1951 | | | |
| | | | | In. | In. | In. | In. | | In. | |
| RIO GRANDE IN NEW MEXICO | | | | | | | | | | |
| Red River | 1 N.M. | 9500 | 1/28 | 12.9 | 4.1 | 12.8 | 0.7 | 13 | 5.5 | |
| Taos Canyon | 2 " | 9000 | 1/27 | 14.4 | 4.6 | 8.4 | 0.1 | 13 | 5.1 | |
| Aspen Grove | 4 " | 9100 | 2/1 | 16.3 | 4.1 | 3.4 | 0.0 | 14 | 3.8 | |
| Hematite Park* | 9 " | 9500 | 1/29 | 13.5 | 3.9 | 7.1 | 0.0 | 12 | 3.7 | |
| Tres Ritos | 12 " | 9000 | 2/3 | 17.4 | 3.8 | 7.5 | 2.3 | 14 | 4.5 | |
| Pay Role | 15 " | 9700 | 1/29 | 23.9 | 5.0 | 16.5 | 0.2 | 12 | 7.1 | |
| Chama Divide | 17 " | 7750 | 2/1 | 17.7 | 4.2 | 7.7 | 2.4 | 13 | 4.4 | |
| Chamita | 18 " | 8500 | 2/1 | 27.7 | 7.4 | 18.3 | 3.6 | 11 | 7.0 | |
| Cordova | 19 " | 10100 | 2/3 | 26.3 | 6.6 | 12.2 | 4.4 | 11 | 7.1 | |
| Panchuela #2 | 20 " | 8300 | 1/29 | 15.5 | 4.0 | 3.5 | 0.9 | 14 | 3.1 | |
| Big Tesuque | 21 " | 10000 | 1/29 | 4.9 | 1.2 | 5.2 | 0.2 | 11 | 4.4 | |
| Elk Cabin | 24 " | 8350 | 1/30 | 11.8 | 2.7 | 2.5 | 0.5 | 5 | 2.5 | |
| Rio En Medio | 26 " | 10400 | 1/30 | 21.4 | 7.8 | 5.9 | 0.3 | 3 | 3.7 | |
| Bateman | 29 " | 9300 | 2/1 | 29.8 | 10.0 | 15.4 | 2.4 | 3 | 8.5 | |
| Fenton Hill | 31 " | 8900 | 2/1 | 15.0 | 4.1 | 5.2 | — | — | — | |
| Average for Drainage | | | | 18.1 | 5.0 | 9.0 | 1.3 | — | 5.0 | |
| CHAMA RIVER | | | | | | | | | | |
| Cumbres Pass #2 | 77 Colo. | 10000 | 1/27 | 43.8 | 14.0 | 21.6 | 29.7 | 13 | 13.7 | |
| Pay Role | 15 N.Mex. | 9700 | 1/29 | 23.9 | 5.0 | 16.5 | 0.2 | 12 | 7.1 | |
| Chama Divide | 17 " | 7750 | 2/1 | 17.7 | 4.2 | 7.7 | 2.4 | 13 | 4.4 | |
| Chamita | 18 " | 8500 | 2/1 | 27.7 | 7.4 | 18.3 | 3.5 | 11 | 7.0 | |
| Bateman | 29 " | 9300 | 2/1 | 29.8 | 10.0 | 15.4 | 2.4 | 3 | 8.5 | |
| Average for drainage | | | | 28.6 | 8.1 | 15.9 | 3.6 | — | 8.1 | |
| PECOS RIVER | | | | | | | | | | |
| Aspen Grove* | 4 N.M. | 9500 | 2/1 | 16.3 | 4.1 | 3.4 | 0.0 | 14 | 3.8 | |
| Panchuela | 20 " | 9200 | 1/29 | 15.5 | 4.0 | 3.5 | 0.9 | 14 | 3.1 | |
| Big Tesuque* | 12 " | 9000 | 1/29 | 4.9 | 1.2 | 5.2 | 0.2 | 11 | 4.4 | |
| Average for drainage | | | | 12.2 | 3.1 | 4.0 | 0.4 | — | 3.8 | |
| CANADIAN RIVER | | | | | | | | | | |
| Hematite Park | 9 N.M. | 9500 | 1/29 | 13.5 | 3.9 | 7.1 | 0.0 | 12 | 3.7 | |
| Tres Ritos* | 12 " | 9000 | 2/3 | 17.4 | 3.8 | 7.5 | 2.3 | 14 | 4.5 | |
| Cordova* | 19 " | 10100 | 2/3 | 26.5 | 6.6 | 12.2 | 4.4 | 11 | 7.1 | |
| Average for drainage | | | | 19.1 | 4.8 | 9.0 | 2.2 | — | 5.1 | |

*On adjacent drainage

ANNUAL REPORT OF THE COMMISSIONER OF THE LAND OFFICE

1907-1908

REPORT OF THE COMMISSIONER OF THE LAND OFFICE

| No. | Name of the land | Acres | Value | Tax | Total | Remarks | Date | By | To |
|-----|------------------|-------|-------|------|-------|---------|------|----|----|
| | | | | | | | | | |
| 1 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 2 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 3 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 4 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 5 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 6 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 7 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 8 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 9 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 10 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 11 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 12 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 13 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 14 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 15 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 16 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 17 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 18 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 19 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 20 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 21 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 22 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 23 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 24 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 25 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 26 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 27 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 28 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 29 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 30 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 31 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 32 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 33 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 34 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 35 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 36 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 37 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 38 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 39 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 40 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 41 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 42 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 43 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 44 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 45 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 46 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 47 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 48 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 49 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 50 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 51 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 52 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 53 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 54 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 55 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 56 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 57 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 58 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 59 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 60 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 61 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 62 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 63 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 64 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 65 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 66 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 67 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 68 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 69 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 70 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 71 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 72 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 73 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 74 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 75 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 76 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 77 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 78 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 79 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 80 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 81 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 82 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 83 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 84 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 85 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 86 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 87 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 88 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 89 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 90 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 91 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 92 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 93 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 94 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 95 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 96 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 97 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 98 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 99 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | | | | |

1000 1000 1000 1000 1000

1000 1000 1000 1000 1000

LIST AND LOCATION OF SNOW COURSES

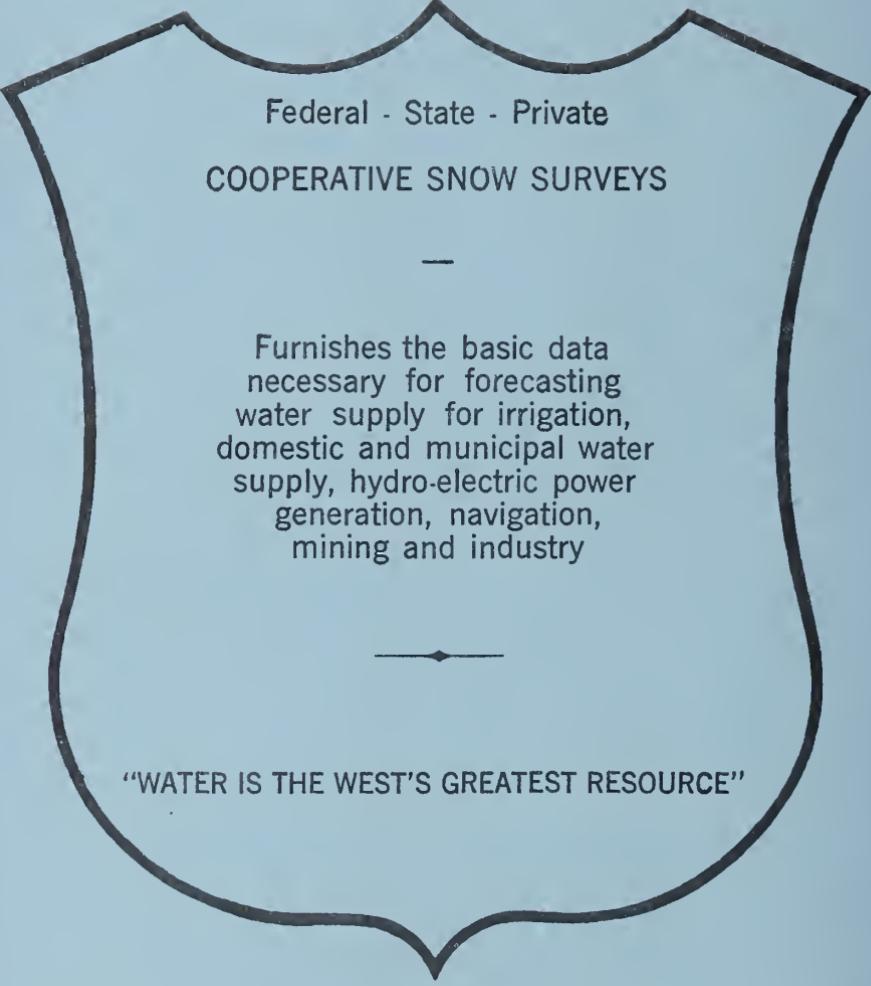
Platte, Arkansas, Colorado
and Rio Grande Drainages

| No. | Name | Sec. | Twp. | Rge. | Elev. | No. | Name | Sec. | Twp. | Rge. | Elev. |
|-----------------------|-------------------------------|-------|------|-------|-------|----------------|-----------------------|------|------|-------|-------|
| <u>Upper Colorado</u> | | | | | | | | | | | |
| 1 SD | Upper Colorado | 1 | 7 | 1E | 6500 | 12 C | Phantom Valley | 7 | 5N | 75W | 9300 |
| | | | | | | 16 C | Berthoud Pass | 35 | 2S | 75W | 9700 |
| | <u>North Platte</u> | | | | | 37 C | M. F. Camp Ground | 16 | 3S | 77W | 9000 |
| 7 C | Park View | 24 | 5N | 76W | 9200 | 44 C | Fiddler Gulch | 1 | 8S | 80W | 11000 |
| 8 C | Columbine | 21 | 5N | 82W | 9300 | 59 C | Lulu | 25 | 6N | 76W | 10200 |
| 136 C | Northgate | 7 | 11N | 79W | 8500 | 64 C | N. Inlet Grand Lake | 26 | 4N | 75W | 9000 |
| 7 W | Sottie Creek | 24 | 14N | 85W | 8200 | 65 C | Lake Irene | 8 | 5N | 75W | 10600 |
| 8 W | Webber Spring | 27 | 14N | 85W | 9000 | 69 C | Arrow | 34 | 1S | 75W | 9900 |
| 9 W | Old Battle | 29 | 14N | 85W | 9800 | 70 C | Lapland | 16 | 2S | 76W | 9500 |
| 37 W | North French Creek | 27 | 16N | 80W | 10200 | 79 C | Fremont Pass | 2 | 8S | 76W | 11400 |
| 38 W | North Barrett Creek | 30 | 16N | 80W | 9400 | 91 C | Lynx Pass | 27 | 2N | 88W | 9100 |
| 39 W | Ryan Park | 34 | 16N | 81W | 8400 | 96 C | Shrine Pass | 15 | 6S | 79W | 10500 |
| 67 W | Soring Creek | 32 | 15N | 85W | 9000 | 97 C | Grizzly Peak | 2 | 5S | 76W | 11250 |
| 68 W | Albany | 18 | 14N | 78W | 9400 | 102 C | Glen-Mar Ranch | 31 | 2S | 77W | 8850 |
| 71 W | Pearl | 18 | 12N | 82W | 8900 | 106 C | Monarch Lake | 30 | 2N | 74W | 8500 |
| | | | | | | 112 C | Granby | 11 | 2N | 77W | 8700 |
| | <u>Laramie</u> | | | | | 127 C | Grand Lake | 36 | 4N | 75W | 8600 |
| 88 C | Roach | 5 | 10N | 77W | 9800 | 138 C | Berthoud Summit | 10 | 2S | 75W | 11300 |
| 111 C | McIntyre | 35 | 10N | 76W | 9100 | 139 C | Frazer View | 34 | 2S | 75W | 10600 |
| 3 W | Brooklyn Lake | 11 | 16N | 76W | 10200 | 143 C | Gore Pass | 2 | 1N | 82W | 8900 |
| 11 W | Foxpark | 21 | 13N | 76W | 9200 | 146 C | Frisco | 18 | 6S | 78W | 9300 |
| 35 W | Libby Lodge | 29 | 16N | 76W | 8700 | 147 C | Snake River | 9 | 5S | 76W | 9700 |
| 36 W | Hairpin Turn | 24 | 16N | 79W | 9500 | 158 C | Summit Ranch | 8 | 4S | 78W | 10000 |
| | | | | | | 163 C | Vail Pass | 28 | 5S | 79W | 10000 |
| | <u>Sweetwater</u> | | | | | 167 C | Kokomo | 23 | 7S | 79W | 10600 |
| 29 W | Grannier Meadows | 19 | 30N | 100W | 9000 | 168 C | Pando | 10 | 7S | 80W | 9500 |
| 47 W | South Pass | 13 | 30N | 101W | 9000 | | | | | | |
| 57 W | Larson Creek | 12 | 30N | 103W | 9000 | | <u>Roaring Fork</u> | | | | |
| | | | | | | 33 C | Ind. Pass Tunnel | 30 | 11S | 82W | 10700 |
| | <u>Laramie Peaks District</u> | | | | | 34 C | North Lost Trail | 20 | 11S | 87W | 9200 |
| 34 W | La Bonte | 11 | 27N | 74W | 8450 | 45 C | Nast | 1 | 9S | 83W | 8700 |
| 70 W | Boxelder | 31 | 30N | 75W | 9000 | 100 C | Ivanhoe | 12 | 9S | 82W | 10400 |
| | | | | | | 144 C | Ruby | 1 | 12S | 83W | 11500 |
| | <u>South Platte</u> | | | | | | | | | | |
| 1 C | Cameron Pass | 2 | 6N | 76W | 10300 | | <u>Yampa</u> | | | | |
| 2 C | Chambers Lake | 6 | 7N | 75W | 9000 | 6 C | Dry Lake | 26 | 7N | 84W | 8300 |
| 3 C | Big South | 33 | 8N | 75W | 8600 | 9 C | Elk River | 21 | 5N | 82W | 9300 |
| 5 C | East Portal | 2 | 2S | 74W | 9400 | 140 C | Routt Line | 13 | 5N | 83W | 9700 |
| 14 C | Hoosier Pass | 13 | 8S | 76W | 11400 | 141 C | Rabbit Ears | 30 | 5N | 83W | 9550 |
| 15 C | Fairplay | 33 | 9S | 77W | 10000 | 142 C | Yampa View | 21 | 5N | 84W | 8500 |
| 41 C | Wild Basin | 24 | 3N | 74W | 10900 | | | | | | |
| 50 C | Deadman Hill | 26 | 10N | 75W | 10200 | | <u>White</u> | | | | |
| 60 C | University Camp | 25 | 1N | 73W | 10300 | 35 C | Surro Mountain | 15 | 2S | 91W | 9000 |
| 61 C | Loveland Pass | 27 | 4S | 76W | 10600 | 36 C | Rio Blanco | 28 | 1N | 88W | 8500 |
| 68 C | Hour Glass Lake | 15 | 7N | 75W | 9500 | | | | | | |
| 83 C | Jefferson Creek | 14 | 7S | 75W | 10100 | | <u>Plateau Creek</u> | | | | |
| 95 C | Hidden Valley | 23 | 5N | 75W | 9550 | 56 C | Mesa Lakes | 35 | 11S | 96W | 10000 |
| 115 C | Deer Ridge | 19 | 5N | 75W | 9050 | 85 C | Trickle Divide | 23 | 11S | 94W | 10000 |
| 116 C | Copeland Lake | 21 | 3N | 73W | 8600 | | | | | | |
| 117 C | Empire | 21 | 3S | 75W | 9650 | | <u>Gunnison River</u> | | | | |
| 118 C | Geneva Park | 18 | 6S | 74W | 9750 | 18 C | Crested Butte | 22 | 13S | 86W | 9000 |
| 120 C | Antero | 1 | 13S | 77W | 9200 | 46 C | Park Cone | 19 | 14S | 82W | 9700 |
| 128 C | Red Feather | 26 | 10N | 74W | 9000 | 53 C | Alexander Lake | 2 | 12S | 25W | 10000 |
| 133 C | Moffatt | 2 | 2S | 74W | 9400 | 55 C | Snowshoe Mesa | 14 | 13S | 89W | 7500 |
| 134 C | Ward | 1 | 1N | 75W | 9500 | 58 C | Ironton Park | 29 | 43N | 7W | 9800 |
| 137 C | Berthoud Falls | 16 | 3S | 75W | 10500 | 97 C | Park Reservoir | 34 | 11S | 94W | 9500 |
| 148 C | Longs Peak | 32 | 4N | 75W | 10500 | 89 C | Porphyry Creek | 19 | 49N | 6E | 10800 |
| 156 C | Lost Lake | 32 | 8N | 75W | 9300 | 101 C | Kannah Creek | 5 | 12S | 95W | 10700 |
| 34 C | Pole Mountain | 35 | 16N | 72W | 8700 | 104 C | Lake City | 13 | 43N | 4W | 10300 |
| | | | | | | 132 C | McClure Pass | 1 | 11S | 89W | 9500 |
| | <u>Arkansas River</u> | | | | | 153 C | Red Mountain | 13 | 42N | 8W | 11000 |
| 19 C | Tennessee Pass | 21 | 8S | 80W | 10200 | | | | | | |
| 21 C | Twin Lakes Tunnel | 22 | 11S | 82W | 10500 | | <u>San Juan</u> | | | | |
| 72 C | Whiskey Creek | 37.2N | 105W | 10300 | 29 C | Upper San Juan | 10 | 37N | 1E | 10000 | |
| 74 C | La Veta Pass | 22 | 28S | 70W | 9300 | 30 C | Silverton | 10 | 41N | 7W | 9400 |
| 78 C | Four Mile Park | 23 | 11S | 81W | 9700 | 31 C | Cascade | 12 | 39N | 9W | 8850 |
| 81 C | Blue Lakes | 30 | 31S | 69W | 10000 | 135 C | La Plata | 4 | 36N | 11W | 9700 |
| 92 C | Monarch Pass | 16 | 49N | 6E | 10500 | 149 C | Spud Mountain | 32 | 40N | 8W | 10700 |
| 119 C | Saint Elmo | 31 | 15S | 80W | 10600 | 150 C | Molas Lake | 7 | 40N | 7W | 10600 |
| 121 C | Timberline | 8 | 9S | 81W | 11100 | 151 C | Howardville | 15 | 41N | 7W | 9800 |
| 165 C | Cooper Hill | 2 | 8S | 80W | 10600 | 152 C | Mineral Creek | 35 | 42N | 8W | 10300 |
| 166 C | East Fork | 9 | 6S | 79W | 10700 | | | | | | |

LIST AND LOCATION OF SNOW COURSES (CONTINUED)

| No. | Name | Sec. | Twp. | Rge. | Elev. | No. | Name | Sec. | Twp. | Rge. | Elev. |
|----------------------------------|-----------------|------|------|------|-------|---------------------------------|-------------------|-------|--------|------|-------|
| <u>Dolores</u> | | | | | | | | | | | |
| 23 C | Rico | 11 | 39N | 11W | 8700 | 7 A | Iron Springs | 22 | 14N | 3W | 6000 |
| 24 C | Telluride | 6 | 42N | 5W | 8600 | 15 A | Willow Ranch | 16 | 21N | 11W | 5000 |
| 25 C | Lizzard Head | 24 | 41N | 10W | 10300 | | | | | | |
| 114 C | Trout Lake | 8 | 41N | 9W | 9700 | <u>Arizona (Lower Colorado)</u> | | | | | |
| <u>Green</u> | | | | | | | | | | | |
| 23 W | Dutch Joe | 33 | 31N | 104W | 8700 | 9 A | Chalendar | 27 | 22N | 3E | 7100 |
| 24 W | Mulligan Park | 17 | 35N | 108W | 8900 | 10 A | Grand Canyon | 21 | 30N | 4E | 7500 |
| 25 W | Kendall R. S. | 23 | 38N | 110W | 7900 | 11 A | Bright Angel | 34 | 33N | 4E | 8400 |
| 26 W | Loomis Park | 14 | 37W | 111W | 8500 | <u>Rio Grande</u> | | | | | |
| 27 W | Snyder Basin | 15 | 29N | 114W | 8040 | 26 C | Wolf Creek | 4 | 37N | 2E | 10000 |
| 28 W | Piney La Barge | 19 | 29N | 114W | 8820 | 27 C | Upper Rio Grande | 13 | 40N | 4W | 9350 |
| <u>Arizona (Gila)</u> | | | | | | | | | | | |
| 11 NM | Frisco Divide | 21 | 6S | 20W | 8000 | 47 C | Silver Lakes | 15 | 36N | 5E | 9600 |
| 14 NM | State Line | 5 | 6S | 21W | 8000 | 49 C | River Springs | 25 | 33N | 6E | 9300 |
| 22 NM | Taylor Creek | 20 | 10S | 10W | 7850 | 76 C | Summitville | 30 | 37N | 4E | 11500 |
| 23 NM | Inman | 6 | 11S | 10W | 7800 | 77 C | Cumbres Pass | 17 | 32N | 5E | 10000 |
| 1 A | Nutriso | 23 | 6N | 30E | 8500 | 80 C | Santa Maria | 8 | 41N | 2W | 9700 |
| 2 A | Beaver Head | 13 | 4N | 30E | 8000 | 82 C | Culebra | 37.2N | 105.2W | | 10000 |
| 3 A | Coronado Trail | 26 | 5N | 30E | 8000 | 84 C | Fort Garland | 13 | 29N | 72W | 8200 |
| 29 A | Rose Canyon | 15 | 12S | 16E | 7300 | 108 C | Platoro | 22 | 36N | 4W | 9950 |
| 30 A | Bear Wallow | 6 | 12S | 16E | 8100 | 109 C | West Conejos | 25 | 35N | 4E | 9450 |
| <u>Arizona (Salt)</u> | | | | | | | | | | | |
| 4 A | McNary | 14 | 8N | 23E | 7200 | 110 C | La Manga | 11 | 33N | 5E | 10000 |
| 5 A | Forest Dale | 2 | 9N | 21E | 6000 | 122 C | Pyramid | 26 | 41N | 5W | 10300 |
| 6 A | Milk Ranch | 28 | 8N | 23E | 7000 | 123 C | Spring Creek Pass | 2 | 42N | 3W | 10900 |
| 20 A | Pacheta | | | | 7800 | 124 C | Pool Table Mt. | 19 | 41N | 2E | 10000 |
| 21 A | Fort Apache | 18 | 7N | 27E | 9000 | 125 C | Lake Humphrey | 32 | 40N | 1E | 9300 |
| 22 A | Baldy | 23 | 7N | 27E | 9000 | 126 C | Cochetopa Pass | 12 | 45N | 3E | 10000 |
| 23 A | Maverick Fork | 13 | 6N | 27E | 9050 | 154 C | Porcupine | 2 | 41N | 3W | 10400 |
| 31 A | Workman Creek | 33 | 6N | 14E | 5860 | 155 C | Wolf Creek Summit | 6 | 37N | 2E | 11000 |
| <u>Arizona (Little Colorado)</u> | | | | | | | | | | | |
| 12 A | Fort Valley | 22 | 22N | 6E | 7350 | 1 NM | Red River | 29 | 28N | 15E | 9500 |
| 13 A | Mormon Lake | 13 | 18N | 8E | 7350 | 2 NM | Taos Canyon | 10 | 25N | 15E | 9000 |
| 19 A | Mormon Mountain | 14 | 18N | 8E | 7500 | 4 NM | Aspen Grove | 12 | 18N | 10E | 9100 |
| <u>Arizona (Verde)</u> | | | | | | | | | | | |
| 8 A | Camp Wood | 3 | 16N | 6W | 5700 | 9 NM | Hematite Park | 8 | 28N | 15E | 9500 |
| 16 A | Antelope Park | 29 | 19N | 8E | 7300 | 12 NM | Tres Ritos | 23 | 22N | 13E | 9000 |
| 17 A | Casner Park | 19 | 18N | 8E | 6930 | 15 NM | Payrole | 16 | 28N | 7E | 9700 |
| 18 A | Munds Park | 7 | 18N | 7E | 6500 | 17 NM | Chama Divide | 36.9N | 106.7W | | 7750 |
| <u>Arizona (Williams)</u> | | | | | | | | | | | |
| 36.9N 106.7W 8500 | | | | | | | | | | | |
| 22 22N 13E 10100 | | | | | | | | | | | |
| 27 19N 12E 8300 | | | | | | | | | | | |
| 17 18N 11E 10000 | | | | | | | | | | | |
| 8 18N 11E 8250 | | | | | | | | | | | |
| 8 18N 11E 10400 | | | | | | | | | | | |
| 34 20N 5E 9300 | | | | | | | | | | | |
| 5 26N 6E 9300 | | | | | | | | | | | |
| 18 19N 3W 8900 | | | | | | | | | | | |

SD - South Dakota; C - Colorado; W - Wyoming; A - Arizona; NM - New Mexico



Federal - State - Private
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"